

Abstract of the Disclosure

A capacitor of a semiconductor device, and a method for fabricating the same, wherein the thickness of the dielectric film is reduced and the formation of the dielectric film is performed at a low temperature to prevent oxidation of the storage electrode are disclosed. The method for fabricating a capacitor of a semiconductor device comprises the steps of: forming a storage electrode using silicon; sequentially depositing a first Al_2O_3 film, a Ta_2O_5 layer doped with Ti, and a second Al_2O_3 film on the storage electrode to form a dielectric film; and forming a plate electrode on the dielectric film using metal. The capacitor of a semiconductor device comprises a storage electrode comprising silicon; a dielectric film disposed on the storage electrode, the dielectric film including a stacked structure of a first Al_2O_3 film, a Ta_2O_5 layer doped with Ti, and a second Al_2O_3 film; and a metal plate electrode disposed on the dielectric film.